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ABSTRACT

In view of continuing trends in farming and the trend toward increasing farm diversification and specialization, the National Association of State Universities and Land Grant Colleges and individual researchers have proposed their own lists of the skills that will be needed by farm management researchers in the future. Because farm management research increasingly entails research in the areas of agricultural production, economics, and management, future farm management researchers need the knowledge, skills, and training necessary to ensure their competence in all three fields. Included among the many areas that must be incorporated into programs to train future farm management researchers are the following: economic principles, intermediate economic theory, accounting, agricultural policy, agricultural finance, agricultural marketing, farm and ranch management, agribusiness management, crop production, soils, plant pathology, animal nutrition, livestock production, and animal breeding. Programs to train future farm management researchers should also include an internship component to allow students to learn working skills and gain first-hand knowledge about the industry. (MN)

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by

Douglas R. Franklin*

Economics Staff Paper 93-4

May 1993

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THE SKILLS AND TRAINING NEEDED BY FARM MANAGEMENT RESEARCHERS IN THE FUTURE: DISCUSSION

Douglas R. Franklin

A farm management researcher at the state ag college was talking to a local farmer. "That wheat field looks terrible," said the researcher. "I'll be surprised if you get five bushels an acre."

"So would I," replied the farmer. "That's my corn field."

Moral: there is a need for qualified training of farm management researchers.

This paper discusses Loren Tauer's paper entitled "The Skills and Training Needed by Farm Management researches in the Future." To discuss the skills and training needed in the future, the priorities identified for the future are to be specified to indicate the direction training may need to be focused. As noted English novelist-playwright and Nobel prize winner John Galsworthy stated, "if you do not think about the future, you cannot have one." Thus, this paper is a forward looking paper in that regard, thinking about the future so that we can focus on a direction. However, Alan Greenspan has pulled in the reins somewhat by stating, "fundamentally, the future is unknowable."

FARM MANAGEMENT RESEARCHERS

Implicitly and explicitly it is expected that the role of researchers is to conduct basic and applied research to assure a safe, economical and adequate food supply, promote a sustainable environment, conserve natural resources, and contribute to the improvement of the socio-economic well-being and overall quality of life of diverse rural and urban populations.

The National Association of State Universities and Land Grant Colleges, (NASULGC)[1], indicated:

* agriculture represents 15 percent of the US economy
* farm output in 1990 was double that of 1950
* assets exceed $1 trillion.
* due to technological advantages the cost of food and fiber is 2-3 times less than if the technology is at 1950 levels
* every $1 invested in agricultural extension, research, and education resulted in $10 return
* agricultural science and technology have reduced by 393 million acres the prime farmland required to meet the nation's needs
* agricultural science and technology along with improve farming practices have reduced soil erosion by a factor of 6 over erosion rates of the 1930's
* agricultural productivity continues to grow but at an alarmingly slower rate, i.e., annual percentage increase in food productivity was 3.1 percent in 1950 but steadily declined to 1.4 percent in 1990

Correspondingly, a study by Gale[2] found the number of new young farm entrants age 25 to 34 fell by 30 percent during the 1980's. Those less than age 25 fell by 50 percent. Gale concluded the number of new young entrants are impacted by commodity prices, interest rates, land values, and non-farm opportunities. At about the same time, The Wall Street Journal (September 14, 1992) reported between 1950 and 1990, the number of U.S. farms declined 60 percent and the total numbers of farmers fell 70 percent (10 million to 2.9 million).

Therefore, to accomplish the role expected of the researcher, the researcher should focus on: improved plant production systems; improved animal production systems; sustainable systems; protection and improvement of water quality; improved human nutrition and health; new crops and uses

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[1] National Association of State Universities and Land-Grant Colleges. "Averting A Crisis By Building For Future Success: An Imperative For The 1990's." A report by the FY'94 Budget Committee, Board on Agriculture. February 1993.

[2] Gale, H. Fred. Why Did the Number of Young Farm Entrants Decline? Amer. J. Agr. Econ. 75(1):138-146. February 1993.

for agricultural products; and socio-economic studies. This focus can be met by addressing the training needed by farm management researchers in the future.

TRAINING DIRECTION

NASULGC proposes two top priorities. First, strengthen base programs, such as Hatch, Smith-Lever, McIntire-Stennis, etc, which will assure a stable resource base in every state and provide flexibility to respond to changing needs and priorities. Second, continue and expand special initiatives, such as the National Research Initiative, and mount new ones. The NASULGC priority program areas are:

* Attain sustainable agricultural systems that are compatible with environmental and social values;
* Develop scientific and professional expertise to advance new technologies and global relationships;
* Address critical social issues in a changing society;
* Enhance the global competitiveness of U.S. agriculture; and
* Provide a safe, affordable, and nutritious food supply.

To succeed in the priority areas and researcher's focus, farm management researchers need to have the knowledge, skills, and training necessary in the management of sustainable agriculture, water quality, nitrogen management techniques, production agriculture systems, production agriculture computer software, government support programs, soil conservation practices, environmental influences, financial health and survival, chemical applications, and biotechnology. This multi-management issue can only properly addressed by appropriately training the researchers.

TRAINING AND SKILLS NEEDED IN THE FUTURE

Loren Tauer indicates as the change in farm size and type of farmer (full-time, part-time, etc.) occurs, resulting in diversification and specialization, then management skills increase. As stated above, farm management researchers will need to have training in a variety of areas of which many of these areas overlap the NASULGC priority program areas.

Tauer states, *"Most of the farm management research done by the profession (Ag Economics) is a study of the results of management factors related to various measures of net returns. We do less research on the management process itself. More focus should be placed on identifying what makes good management and how we teach people to be good managers."* These are three important sentences.

The first is a production economics related issue. This raises the question, is farm management research production economics? The answer is no. Farm management research is the interrelated set of research of agricultural production research, economic research, and management research. One set is not a subset of the other two sets, nor is one set not related to the other two sets.

The third sentence is the relationship of the three research sets; agricultural production, economic, and management. The focus on identifying what makes good management and training is the educational background of the three research focuses, i.e., economic principles, intermediate economic theory, accounting, ag policy, ag finance, ag marketing, farm and ranch management, ag-business management, crop production, soils, plant pathology, IPM, animal nutrition, livestock production, and animal breeding as a short list.

Loren Tauer identifies five major points needed to be a successful farm management researcher. These are 1) understand the industry; 2) sufficient knowledge of economics; 3) communication skills; 4) management skills; and 5) continuation of lifelong learning. Several more points could be added, most notably computer friendly skills, but other points would most likely fine tune the five listed.

Tauer superficially discussed the structure of training (education/courses) for an undergraduate degree by stating that agricultural degrees are too narrowly focused an agriculture and not enough on science. However, I argue the structure of undergraduate educational training should be stressed. The structure should include selected courses in production; humanities; science; economic theory; management, which may include several of the following: decision making, recordkeeping, enterprise selection, finance, marketing, agricultural resource selection and use, and operations; and strategy courses involving problem solving. These courses will entail an underlying theme stressing management and not production. Many of these courses will meet the training necessary to meet the five major skills Tauer indicated to be a successful farm management researcher.

In the discussion of M.S. degree in agricultural economics, Tauer states that many entering students lack a formal economics/ag economics background. Tauer states a good M.S. program should consist of statistics, econometrics, mathematical-programming, production economics, marketing, resource economics, and two elective courses. *However*, if a student lacks an undergraduate background in economics/ag economics and if a good M.S. program doesn't include economic theory courses, then, how will the student

gain "sufficient knowledge of economics" necessary to be a "successful farm management researcher?"

Since Tauer's discussion of the M.S. and Ph.D. program does not include courses in farm management and "knowledge if the industry" type courses, it can only be assumed that these areas are to be covered in the undergraduate training years.

CONCLUSION

Loren Tauer implies that a successful farm management researcher is trained through a "traditional" education process, not unlike what many of us have gone through. I also propose that included in the educational process - prior to, during, or immediately after a formal undergraduate training - the student (trainee) undertake an internship with a company to gain valuable working skills and knowledge about the industry. The internship/employment will reinforce formal educational training in order to be a successful farm management researcher. I would also stress a formal educational training in economic theory is a necessary condition to be a farm management researcher within of the discipline the researcher undertakes. Both of these tend to reinforce the training needed to meet the priority program ares as outlined by NASULGC and the focus of the farm management researcher.

In closing, John Kenneth Galbraith once said "economics is extremely useful as a form of employment for economists." With apologies, "economics is extremely useful as a form of employment for farm management researchers."